

**NOMINATION
OF
LAKE MARGARET POWER SCHEME
FOR A
HISTORIC ENGINEERING MARKER**



Prepared for Engineering Heritage Tasmania by:

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Reviewed:

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Date:

June 2007

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INTRODUCTION

The Lake Margaret Power Scheme (LMPS), which is located in the upper catchment of the Yolande River on West Coast of Tasmania, comprises two distinct hydro-electric power stations that were built by the Mount Lyell Mining and Railway Company (MLM&RC) during the pioneering mining period of the early twentieth century.

The Upper Station was initially commissioned in 1914 with four 1.2 MW Pelton turbines and alternators installed. Two additional machines were installed in 1918.

In the early 1930s the Upper Station was extended and another machine added bringing the total installed capacity to 8.4 MW. During this period the Lower Station was also constructed and a single 2 MW Francis turbine machine was commissioned in 1931. Since then despite various station and headwork upgrades the LMPS has retained much of its historic fabric and early infrastructure.

In 1985 the Hydro Electric Commission (now Hydro Tasmania) purchased the LMPS from the MLM&RC and continued to operate the scheme until the Lower and Upper Stations were decommissioned in 1994 and 2006 respectively.

As part of its strategic assessments for LMPS, Hydro Tasmania commissioned the following independent cultural heritage assessments of the scheme.

Godden Mackay May 1994 – The Lake Margaret Cultural Heritage Report

Paul Davies P/L March 2006 – Lake Margaret Power Scheme – A Conservation Management Plan Volumes 1 & 2.

Based on these studies and work by the Tasmanian Heritage Council, the LMPS was added to the Tasmanian Heritage Register in February 2007. Since then the scheme has been nominated by the West Coast Council for inclusion on the National Heritage List and is clearly recognised as one of the earliest and most significant and intact hydro-electric power schemes remaining in Australia.

This nomination for the LMPS to be awarded a Historic Engineering Marker is based primarily on the above-mentioned reports and work by the Tasmanian Heritage Council.

Plaque Nomination Form

To:

The Administrator
Engineering Heritage Australia
Engineers Australia
11 National Circuit
BARTON ACT 2600

Name of work: **Lake Margaret Power Scheme**

The above-mentioned work is nominated to be awarded a

Historic Engineering Marker

Location, including address and map grid reference if a fixed work:

About 10 km north of Queenstown, Tasmania.

Tasmap Sheet Franklin edition 1 1982

AMG Zone CP79448655

Owner (name & address):

Hydro Tasmania, 4 Elizabeth Street, Hobart 7000.

.....
The owner has been advised of this nomination and a letter of agreement is attached.

Access to site: **Turn off the Zeehan Highway, 3 km north of Queenstown**

Travel about 6 km along access road to Station.

.....
Nominating Person: **Phil Mathers**

Phil Mathers

Nominator

Date: 10 June 2007

Bruce Cole

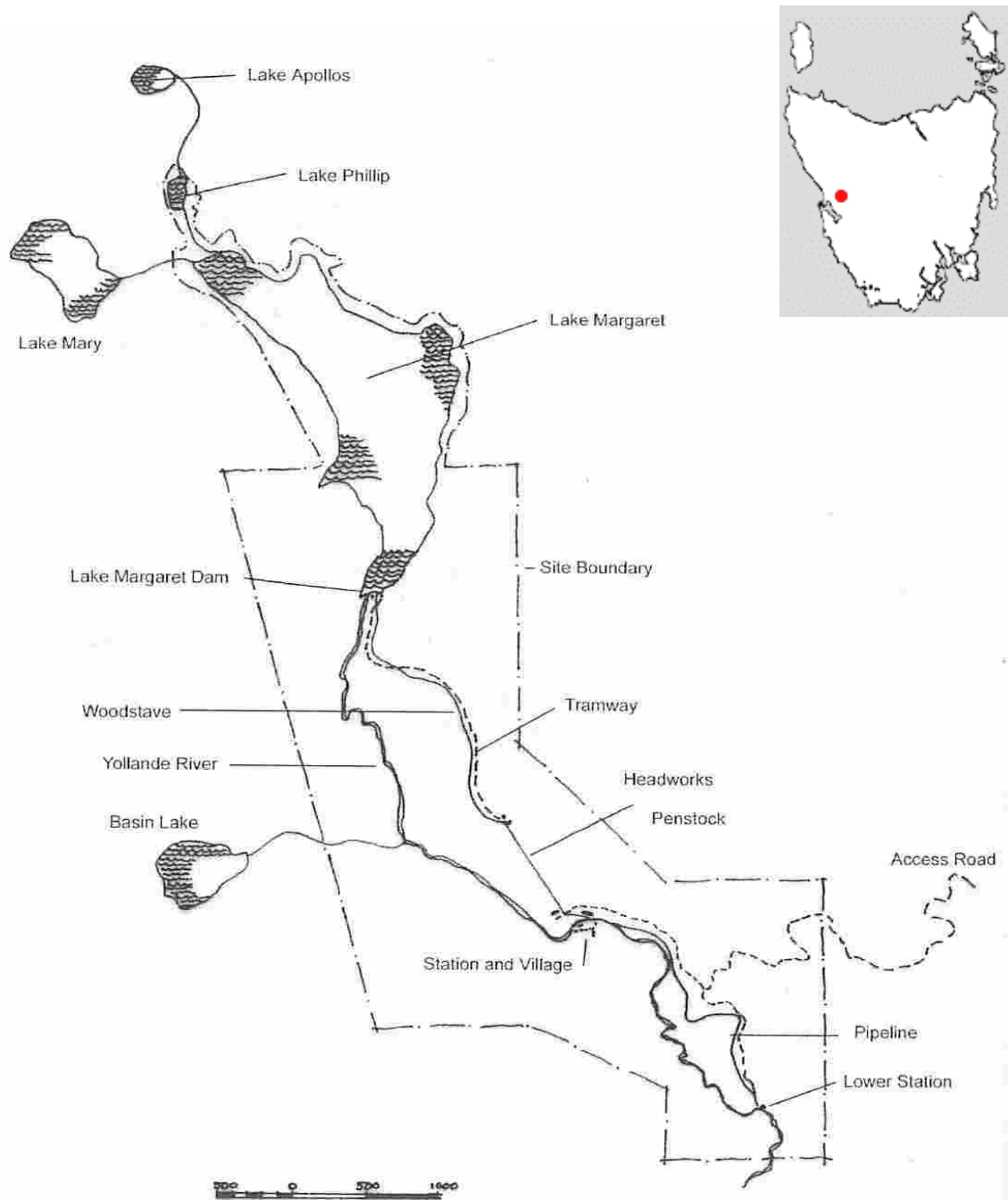
Chair, Engineering Heritage Tasmania

Date: 10 June 2007

BASIC DATA

Name	Lake Margaret Power Scheme
Location	Upper catchment Yolande River approximately 10km north of Queenstown
State:	Tasmania
Municipality	West Coast
Owner	Hydro Tasmania
Original Use	Electricity Generation
Present Use	Decommissioned (pending a redevelopment vs refurbishment feasibility study) & Nature Conservation Area.
Construction Dates	Tracks and tramway access c1878-1914. Upper Station, headworks & village Stages 1 & 2 1911-1918. Lower Station and headworks 1930-31. Major upgrade works c1938 and c1970.
Feature Type	Mountain lakes and diversions, dams, intakes, pipelines, penstocks, power stations, substation, transmission lines, roads, access tracks, haulageways, sheds and village.
Architecture Style	Various
Integrity	Predominantly intact
Heritage Listings	The LMPS is registered on Tasmania Heritage Register and nominated for inclusion on National Heritage List.

Lake Margaret Scheme Sketch Plan



The above sketch plan is based on the work of Godden Mackay.

BRIEF HISTORY

The history of the LMPS is inextricably linked to that of the MLM&RC, the longest operating copper mining venture in Australia.

Due to the escalating cost of providing firewood as fuel, the general manager of the MLM&RC, Robert Sticht initiated the decision to build the LMPS Upper Station in 1911.

Access to the LMPS site was via a small 2 foot wide steel tramway from Howards Plains (an extension of the MLM&RC wood cartage tramway). As work progressed along the line a temporary 2.5 foot gauge wooden tramway was laid to enable construction materials to be delivered to the site.

At the time of commissioning the Upper Power Station in 1914 the main infrastructure components included:

- A 4.8 m high concrete gravity dam at Lake Margaret.
- A woodstave (Oregon) hilltop pipeline approximately 2.2 km long by 1.22 m diameter.
- Two 915 m long riveted steel penstocks with section diameters ranging from 550 mm to 750 mm.
- A haulage system and tramway for servicing the dam and woodstave pipeline.
- The Upper Lake Margaret Power Station built mainly of concrete housing four 1.3 MW horizontal shaft Boving/Gordon Pelton turbine coupled to 1.2 MW General Electric generators.
- A 10km long two circuit 6.6 kV transmission line to the Mt Lyell Mine site.

Subsequent developments and upgrades to the LMPS are listed in chronological order below:

Between 1914 and 1920 The Lake Margaret cottages and community hall constructed.

- 1918 Third penstock and two additional machines installed.
Dam raised 11 m to current height.
- 1922 A 44kV transmission line was completed by the Tasmanian Government to Zeehan and extended to Williamsford and Rosebery in 1927.
- 1930 Catchment enlarged by diversion of Lake Peter to Lake Margaret storage.
Upper Station enlarged and seventh machine added bringing the capacity of the station to its current configuration of 8.4 MW capacity.
- 1931 The Lower Station completed with a 2 MW Boving Francis turbine coupled to 1.8 kV Metropolitan Vickers generator. The headworks included a diversion weir on the Yolande River immediately downstream of the Upper Station, a single woodstave pipeline (Karri) and a steel penstock.

-
- 1932 Lower Station control board installed in Upper Station. Except for startup, the Lower Station was remotely operated from the Upper Station.
- 1932 Single men's quarters built.
- 1935 Third 6.6kV transmission line installed.
- 1938 The Upper Station Oregon woodstave pipeline replaced by the current (decommissioned) King Billy woodstave pipeline.
- 1948 The Hydro Electric Commission took over the supply of electricity to Queenstown and Gormanston. LMPS was connected to grid.
- 1964 A road replaced the tramway as the only means of access to the power stations and village.
- 1969 Original mine winder used for installing the Upper Station penstocks replaced by new haulage system.
- 1970 Three original penstocks replaced by new single 1.2m diameter steel penstock to the Upper Power Station. This included dresser couplings, distributor and seven new, turbine off-takes at the station. The installation included a new hilltop valve, 7 main isolating valves, 7 main inlet valves and a surge pipe.
- The 3 wire wooden pole transmission line replaced with a four circuit steel tower transmission line.
- 1972 Approx 30% of Lower Station woodstave pipeline replaced with King Billy in the 60s with the balance replaced with treated hardwood in 1972.
- 1974 Under contract, Lake Margaret Dam was post-stressed and grouted by the Hydro Electric Commission.

During the 1970s and 80s the generating equipment was extensively refurbished.

- 1976 8 Westinghouse Static Excitation Rectifier units and 7 ASEA triple surge diverters were installed. These replaced the original, 1914 exciters.
- 1984 New control panels installed at the Upper Station.
- 1985 LMPS sold to the Hydro Electric Commission (HEC) through the Tasmanian Government. MLM&RC continued to operate and maintain the scheme until 1994. Thereafter the HEC engaged the existing contractor, 'Lake Margaret Heritage Co to operate and maintain the scheme until 2004.
- 1994 The Lower Station was decommissioned and mothballed. Its woodstave pipeline collapsed soon after dewatering.

From 1994 to 2003 various upgrades to the Upper Station and headworks were carried out. These included upgrades to station earthing, AC supplies, DC supplies, fire and intruder detection and monitoring of critical electrical and mechanical parameters. For the headworks the haulage way and hilltop valves were upgraded along with minor repairs to the access track and woodstave pipeline. The power station was repainted.

2006 The Upper Power Station was closed on 30 June 2006 due to safety concerns associated with the woodstave pipeline and its supports.

Following closure of the LMPS a Care and Preservation Plan was put in place to ensure that the significant heritage values of the scheme were preserved.

For a more comprehensive history of the LMPS see References 1, 2 and 3. Reference 2 is available on Hydro Tasmania website at www.hydro.com.au.

ENGINEERING HERITAGE ASSESSMENT

Historical Phase

The LMPS is the fourth oldest hydro-electric scheme of any substantial size in Australia. It was preceded by Duck Reach (1895) in Launceston, Waratah (1907-09) at Mt Bischoff, and Moorina (1909) still operating in the northeast of Tasmania.

The LMPS is inextricably linked to the history of the MLM&RC and the people of the West Coast. It was the largest privately developed hydro-electric power station in Australia of its time and was the forerunner of the large-scale publicly funded hydro development of Tasmania.

From its inception the LMPS can be seen as a continuum of changing industrial and technological practices. Initially built to provide cheaper energy than that provided by Mt Lyell's wood fired power-station the capacity of the scheme was progressively increased and the scheme's infrastructure was either upgraded or refurbished over a continuous operating period of 92 years.

In 1916 the MLM&RC utilised the LMPS hydro-electric power in the floatation method of extracting copper as opposed to the lesser fuel efficient pyritic smelting. By 1922 all pyritic smelting ceased and the demand for firewood fell sharply. (Ref 5).

The Lower Station in its own right demonstrated the early use of remote control and is a "rare almost unchanged time capsule of 1930s hydro-electric generating technology with near intact surrounding infrastructure" (Godden Mackay).

Historical Individuals or Association

In 1911 AGM Michell, a Melbourne engineer reported favourably on the development potential of Lake Margaret and the directors of the MLM&RC agreed to proceed with the scheme (Blainey – Peaks of Lyell).

Robert Sticht, the General Manager of the MLM&RC from 1897 to 1922 is an important person at a national level. He was responsible for successfully introducing pyritic smelting of copper ore in Tasmania, social reforms and the pioneering development of the LMPS.

The LMPS is of historic cultural heritage significance due to its isolation and special association with the pioneering mining communities on the West Coast of Tasmania and their descendants. Included in the latter are the descendants of the migrant Maltese construction workers (1912) that carried out much of the tramway and civil engineering infrastructure works.

Hydro Tasmania, a major electricity authority since 1914, has owned and been responsible for the management of the LMPS since 1985. It is currently reviewing its long-term strategy for the scheme.

Creative Technical Achievement

The construction and continued operation of the LMPS demonstrated the ingenuity and technical skills of the employees of the MLM&RC. This is reinforced by the fact that all machinery and imported materials had to be transported via the Abt Railway from the port of Strahan to Queenstown and then transferred to a small two foot gauge tramway to Lake Margaret. This mode of transport remained unchanged until the first road access from Hobart to the area was opened on 19 November 1932 and the tramway from Queenstown to Lake Margaret was replaced by road in 1964.

The LMPS has exceptional ability 'more than any other power station in Tasmania' (Davies:2006) to demonstrate early twentieth century hydro technology within Australia, including the demonstration of engineering aspects derived from nineteenth century mining technology. This ability is provided by the exceptional integrity and accessibility of the original infrastructure most of which was built between 1912 and 1932.

Research Potential

The LMPS has potential to yield important information about early hydro-electric engineering and equipment (including use of mining equipment such as winches).

The archaeological potential of the LMPS is significant given the intactness of the scheme and the associated village used to house operation and maintenance employees.

Records held on site including photographic and relic displays together with potential oral histories can only add to the understanding of the development of mining and early use of electricity by those living in the remote West Coast communities.

Social and Cultural

The LMPS that was the sole supplier of electricity to Queenstown and Gormanston is an integral part of the history of the West Coast and is held in high regard by the West Coast community. This is evidenced by the fact that the West Coast Council initially refused to allow the woodstave pipeline to be demolished in 2006 and subsequently nominated the site for National Heritage listing.

The LMPS is especially important to past employees and their families that lived together in a remote and closely knit community. A 'Back to Lake Margaret Day' was organised by Hydro Tasmania on 18 March 2007 and was well attended by 200 people.

The area is also viewed with much affection by hydro engineers/technicians, tourists and the bushwalking community.

Rarity

Due to the exceptional integrity of its historic assets the LMPS is a rare example of an early twentieth century hydro-electric scheme in Australia. 'The LMPS represents the pinnacle of private generation in the State and marks the change to public power generation as seen at Waddamana' (Davies 2006).

"The lower station is a rare almost unchanged time capsule of 1930s hydro generation technology with intact surrounding infrastructure. It is also rare in both a Tasmanian and Australian context as a small single Francis turbine station" (Godden Mackay).

Representativeness

The LMPS "is one of a few sites in Australia whereby the whole process of power generation, construction, staffing and community life at an industrial settlement is readily evident" (Ref 3).

The scheme itself has all the major engineering components of a hydro-electric development: dams, pipelines, penstocks, valves, power stations, control equipment and transmission lines.

COMPARATIVE ANALYSIS

Appendix A provides a detailed comparative analysis of LMPS against earlier power schemes of significant size, namely, Duck Reach (1895), Waratah (1907-09) and Moorina (1909).

All subsequent hydro-electric power developments in Tasmania were built by the public sector and by comparison are of much larger scale.

STATEMENT OF SIGNIFICANCE

Statements of cultural significance for the LMPS have previously been prepared by Godden Mackay against National Estate guidelines in 1994, and by Paul Davies P/L in 2006 against the Tasmanian Historic Cultural Heritage Act 1995.

Because of the close alignment of Engineers Australia Heritage assessment criteria with that of the Tasmanian Historic Cultural Heritage Act 1995, the statement of significance prepared by Paul Davies is with minor modifications repeated below.

The LMPS is a place of outstanding engineering and cultural heritage value. It encapsulates the early development of hydro-electric generation in Australia and Tasmania and the pioneering enterprise of the West Coast of Tasmania that was integrally linked to mining development in a remote and mountainous area. The development of the Mt Lyell Mining and Railway Co mines (an icon mining development in Australia) and the town of Queenstown were dependent on the operation of the power scheme.

The place is one of the earliest power schemes in Australia whose value is enhanced by its continued operation until 2006. It was the last privately built and operated scheme in Tasmania and marked the major change to public power generation in the State.

The site is a rare and intact example of not only the power generating plant with its rare set of early twentieth century generating and control equipment but the associated infrastructure of dams, pipelines, penstocks, buildings, small village and the very rare lower station added in 1931.

The LMPS has the ability more than any other hydro power station in Tasmania, to demonstrate all aspects of its history and operation within an accessible wilderness area. It is a place that has a very high interpretive value.

DRAFT CITATION FOR PLAQUE

Lake Margaret Power Scheme

The Mt Lyell Mining & Railway Company built this hydro-electric scheme to replace its voracious wood-fired steam-driven station. Commissioned in 1914 and expanded in 1918 and 1931, it was the sole supplier to the West Coast mining communities until 1937. The Lower and Upper Stations operated continuously until closure by Hydro Tasmania in 1994 and 2006. It was the last private scheme to be built in Tasmania, and it displays rare and intact early 20th century machinery and equipment. (79 words)

The Institution of Engineers Australia,
and Hydro Tasmania 200?

PHOTOGRAPHS



Lake Margaret Dam and Intake



Dam Outlet & Woodstave Pipeline



Upper Station Wood Stave Pipeline and Dam Access Track



Upper Station

- Original penstocks (decommissioned) on LHS of stairway
- Current single penstock on RHS of stairway
- Lake Margaret Village in background



Upper Station Machines



Lower Station Storage Weir and Intake



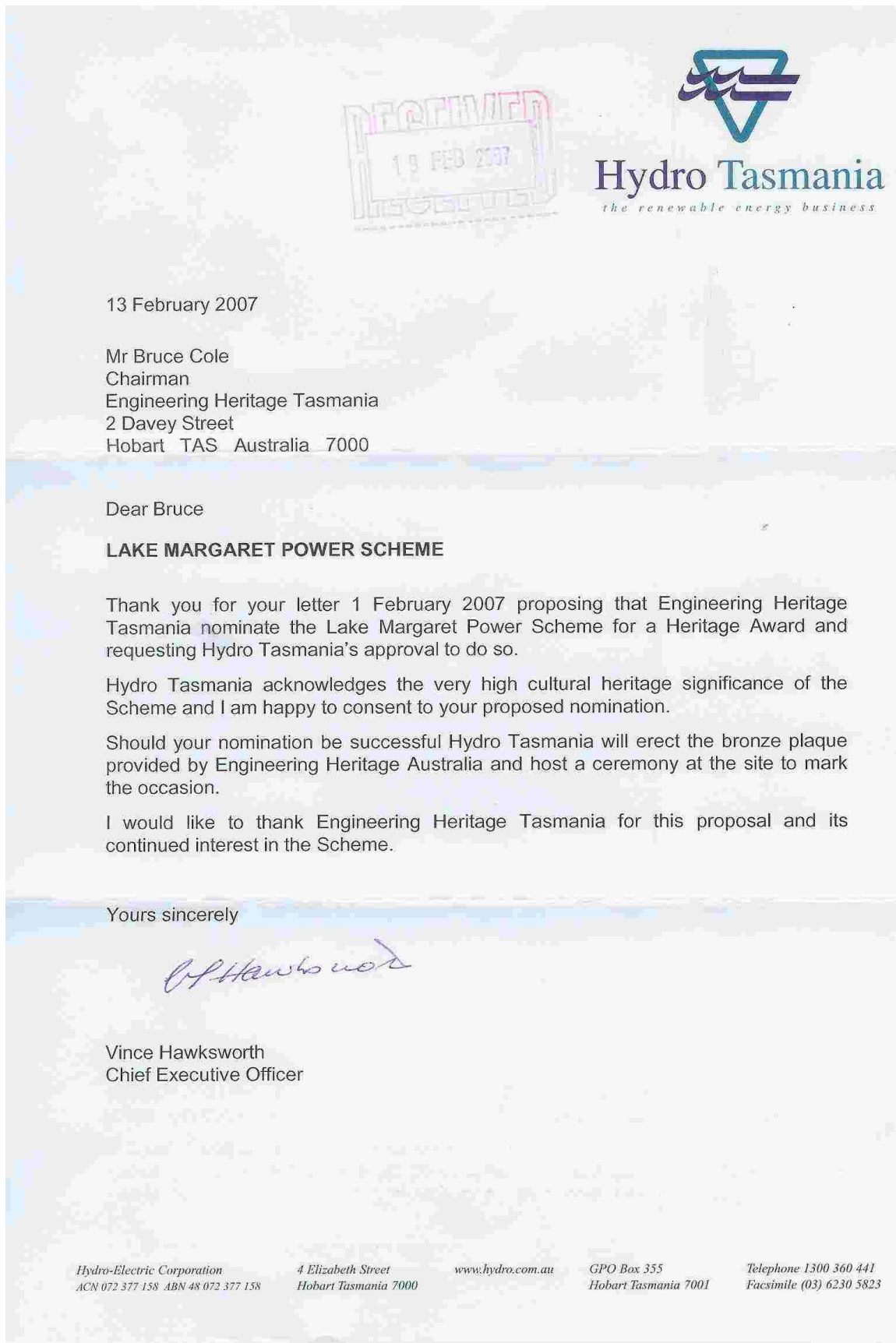
Lower Station

Note haulageway on LHS



Lower Station Machine – Before decommissioning in 1994

OWNERS PERMISSION LETTER



ACKNOWLEDGEMENTS

In preparing this submission the author would like to acknowledge the assistance given by the following organisations and personnel.

Hydro Tasmania

Sandra Hogue
Sarah Waight

Heritage Tasmania

Dr Marita Bardenhagen
Angela McGowan

Others

Fred Lakin who provided information on rail and tramway access
Bruce Cole for preparing Appendix A

REFERENCES

- 1 The Lake Margaret Cultural Heritage Study Report – Prepared for The Hydro Electric Commission May 1994 –Godden Mackay Heritage Consultants.
- 2 Lake Margaret Power Scheme – A Conservation Management Plan March 2006 – Paul Davies P/L Architects Heritage Consultants.
- 3 Lake Margaret Power Scheme – Permanent Registration Document THR-ID-10863 – Tasmanian Heritage Register 2007.
- 4 The Peaks of Lyell – Geoffrey Blainey 1954.
- 5 A History of Railways and Tramways on Tasmania's West Coast – Lou Rae 1993.
- 6 A Million Horse – Tasmania's Power in the Mountains 1962 – RMH Garvie, The Hydro-Electric Commission, Tasmania.
- 7 The Mount Lyell Hydro-Electric Power Scheme, Tasmania – B Whittington, The Mining and Engineering Review, April 6, 1914 pp.203-205.
- 8 Lake Margaret Hydro-Electric Power Scheme, Mt Lyell, Tas. – Geo W Wright, Proc Aus. Inst. of Mechanical Engineers, No.19, 1915, pp 157-181.

WEB SITE INFORMATION

On the Australian Heritage Places Inventory, search under "West Coast Municipality" and "Tasmania". Lake Margaret is listed in alphabetical order. On the Lake Margaret page there is also a link to the National Heritage List No.105942 which has an even longer entry.

APPENDIX A

COMPARISON WITH OTHER EARLY HYDRO-ELECTRIC SCHEMES

In assessing the significance of an historic work, it can be helpful to have a comparison with other developments in the same era. Brief descriptions of five early schemes are set out below. Two minor early schemes, the Waverley Woollen Mills (Launceston, 1890, 63 kW) and Thargomindah (Queensland, 1893, 16 kW) have not been included.

1. DUCK REACH POWER SCHEME - Launceston 1895.

The Duck Reach Power Scheme was built by the Launceston City Council on the South Esk River to light the city streets (replacing gas lights) and to provide power for electric motors. Initially it provided 60 kW of direct current (DC) and 300 kW of alternating current (AC). It was expanded in stages to 2000 kW by 1921 and converted to 3 phase AC. The scheme supplied all the electricity needs of Launceston until 1924 when a transmission line from Waddamana was constructed. It continued to operate until 1955 when the much larger Trevallyn Scheme made better use of the water.

Although only a few kilometres from the city, access to the site was difficult due to the steepness of the gorge. Machinery and materials had either to be lowered down a steep hillside on a haulageway or carried across the river on a flying fox.

The principal features of the scheme were low diversion weirs across the river channels, a tunnel half a mile in length and five feet in diameter through hard rock, and a five foot diameter wrought iron penstock leading down the steep slope to the power station perched above the river bank. The head was about 110 feet (34 m). DC and AC power lines carried the output to a substation in the city. Three stone houses were built near the station for the operating staff.

In 1929 record floods destroyed the power station building, but generation was restored within a year and the station was rebuilt.

After closure the turbines and generators were removed and the building deteriorated. However, to celebrate its centenary in 1995, the empty building was cleaned up. Visitors can now walk across a suspension bridge to the site, read its history on interpretive panels, see one of the original turbines and generators and climb up beside the pipeline to the tunnel outlet.

Duck Reach Power Scheme is listed on the Tasmanian Heritage Register as a component of Launceston's famous gorge, and was awarded a Historic Engineering Marker in 2006 by Engineers Australia.

Brief statement of significance:

- Duck Reach is the first commercial hydro-electric power station to be built in Australia.
- It marks the end of 40 years of gas lighting and the adoption of both DC arc lights and AC for both incandescent lamps and electric motors.

- The expansion of the station enabled the City to attract new industries, and the profits assisted municipal developments.
- The scheme is associated with several eminent engineers during the investigation, design, construction, operation and expansion phases.
- It is now a valuable tourist destination close to the city. Sufficient components of the scheme remain for visitors to appreciate its extent, and interpretive signs and photographs fill in the gaps.
- There is scope for the exhibit to be enhanced by recovering and reinstating more of the missing machines.

2. WARATAH POWER SCHEME - Mt Bischoff Tin Mine 1907-09 (Northwest)

The 40 head stamping mill at the Mt Bischoff Mine was driven by a large water wheel. Mine Manager Henry Kaiser experimented with a DC dynamo driven from the water wheel shaft in 1883 and eventually had 50 lamps running in the mill, workshops offices and store. The maintenance cost of electric lamps was much less than kerosene lamps. Further dynamos and accumulators were added up to 1902.

A hydro-electric power scheme was evaluated and, in 1905, a contract was let to Noyes Bros., Melbourne, to supply the equipment and build the power station. Construction began in June 1906 and the first power was generated from the station in December 1907.

The water supply for the power station was taken from a reservoir east of the town via a two km long tunnel which came directly under the town to the right bank of the river at the top of the Waratah waterfall. A second supply came from a smaller dam lower down on the same creek as the main reservoir via an open water-race around the hillside to the top of the falls.

The water was carried across the top of the falls by a 450 mm diameter pipe, through the mill and thence by open channel and pipe sections to a hilltop storage tank high on the south-eastern slope of Mt. Bischoff. This gave an operational head of 180 metres to the power station. A 450 mm diameter steel penstock from the tank carried the water down the hill and across the river to the station situated on the right bank of the Waratah River, some 200 metres below the Ringtail Falls.

The only access to the station was via haulage beside the pipeline or by foot tracks, one down either side of the river.

Initially the power station was equipped with two Pelton wheel turbines coupled to 140 kVA generators. A third unit consisting of a turbine with a 375 kVA generator added to the power supply in 1909 and another similar unit was installed in 1912.

The power was transmitted at 2200 Volts to various substations. Motor-generator sets transformed some of the power to DC for use by electric locos.

Although the installed capacity of the power station totalled 1030 kVA, it was not possible to average more than 390 kW owing to the limitations of the water supply. The amount of peak loading depended on the amount of water held in the hillside storage tank. When this became low, the load on the station had to be reduced until it had refilled.

Brief statement of significance:

- Mt Bischoff is an example of the very early adoption of water power and electric lighting in the mining industry (1884)
- Mt Bischoff is a good example of utilising local hydro potential to take the significant step from low head water wheels to high head Pelton turbines.
- Heinrich Kayser was Tasmania's first high-profile mine manager.
- The town of Waratah owes its existence to the tin mine which operated from 1873 to 1947.

3. MOORINA POWER SCHEME - Moorina 1909 (Northeast)

Prior to commissioning of the power station the Pioneer Tin Mining Company operated its workings using water collected from streams and conveyed by races and pipelines for jetting with hydraulic giants and for sluicing. Gravel pumps were mounted on barges and driven by steam power. To improve the water supply and to provide more economical power than steam, it was decided to build a power development using water from the Frome River, with the addition of water from the upper reaches of the Wyniford River.

A diversion weir on the Wyniford River diverts water by a short race into Kent Creek whence it flows via Wickborg Creek into the Frome River and Frome Dam. The dam is a concrete faced rockfill embankment 18 m high, the first dam of this type in Australia. Water from the dam is conveyed by a race 3 km in length to the power station penstock. Tail water from the station is taken 10 km by race and pipeline to the mine at Pioneer.

Ordering of machinery commenced in 1907, the major construction work took place in 1908 and power station was commissioned in April 1909. Moorina is the oldest hydro- electric station still operating in Australia.

Three impulse turbines rated at 480 HP (358 kW) on a static head of 129 metres drive three 3-phase 360 KVA alternators. For optimum efficiency, loading is 300 to 330 kW per machine and 900 kW for the station.

Power was supplied to the mines through solid 9.2mm copper wires on wooden poles.

It is worth noting that the 1929 record flood which demolished Duck Reach Power Station on the South Esk River and Briseis Dam on the Cascade River also overtopped Frome Dam (the same type as Briseis) but Frome Dam only suffered minor damage and was repaired.

Since tin mining ceased at Pioneer and South Mt. Cameron, the power station has continued to operate by supplying power to the State grid. The power scheme is being operated and maintained by three individuals who have invested their own funds to do so.

Brief statement of significance:

- Moorina is the oldest hydro-electric station still operating (2007) in Australia.

- Frome Dam is the first concrete-faced rockfill dam in Australia, and it survived the 1929 flood.
- The scheme was well-designed and is in an intact condition.
- It served a double purpose in supplying both electricity and additional water to the Pioneer Tin Mine.
- The village of Moorina probably owes its existence to the construction of the power scheme.

Moorina Power Scheme is listed in the Tasmanian Heritage Register.

4. LAKE MARGARET POWER SCHEME - Queenstown 1914 (West Coast)

Full details of this scheme are presented in the body of this nomination.

Brief statement of significance:

- The scheme originally involved tramway access, engineering works and a village, and operated continuously from 1914 to 2006.
- The continued development of the Mt Lyell copper mine and the town of Queenstown depended on the operation of the scheme.
- It was the last privately-built scheme in Tasmania.
- The Lower Station is the earliest known semi-automatic hydro-electric station in Tasmania and possibly the second automated station in Australia after Rubicon in Victoria.
- Most features of the scheme are still intact and their heritage values are being protected. A Conservation Management Plan has been prepared and the case for either redevelopment or refurbishment is under consideration.
- Two heritage assessments have rated its heritage significance as very high.

COMPARISONS BETWEEN LAKE MARGARET AND THE OTHER SCHEMES

Lake Margaret, in relation to Duck Reach (1895),

- was built by private enterprise;
- had a much higher generating capacity (8.4 MW cf 2 MW);
- was in a much more remote area;
- had an established demand (its Mining company), and
- has all of its original equipment in place.

Lake Margaret, in relation to Mt Bischoff (1907),

- was also built by a mining company for its own use;
- had a much higher generating capacity (8.4 MW cf 1.1 MW);
- had its own village;
- supplied Queenstown as well as the Mine;
- continued operating until 2006, and
- has all of its original power station equipment in place.

Lake Margaret, in relation to Moorina (1909),

- was also built by a mining company for its own use;
- had a much higher generating capacity (8.4 MW cf 1.1 MW), and
- ceased operating in 2006.